International Storage and Disposal Facilities - Considerations in the IAEA Context

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1. IAEA Statute and Joint Convention

ARTICLE II OBJECTIVES

The Agency shall seek to accelerate and enlarge the contribution of atomic energy to peace, health and prosperity throughout the world. It shall ensure, so far as it is able, that assistance provided by it or at its request or under its supervision or control is not used a way as to further any military purpose.

ARTICLE III FUNCTIONS (SHORTENED)

A. The Agency is authorized:

To encourage and assist research on, and development and practical application of, atomic energy for peaceful uses throughout the world;

- To foster the exchange of scientific and technical information on peaceful uses of atomic energy;
- To encourage the exchange and training of scientists and experts in the field of peaceful uses of atomic energy;
- To establish or adopt, in consultation and, where appropriate, in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, standards of safety for protection of health and to provide for the application of these standards.

B. In carrying out its function, the Agency shall:

- Conduct its activities in accordance with the purposes and principles of the United Nations to promote peace and international co-operation.

JOINT CONVENTION ON THE SAFETY OF SPENT FUEL MANAGEMENT AND ON THE SAFETY OF RADIOACTIVE WASTE MANAGEMENT

Preamble

The Contracting Parties

(VI) Reaffirming that the ultimate responsibility for ensuring the safety of spent fuel and radioactive waste management rests with the State;

(IX) Affirming the importance of international co-operation in enhancing the safety of spent fuel and radioactive waste management through bilateral and multilateral mechanisms, and through this incentive Convention;

(XI) Convinced that radioactive waste should , as far as is compatible with the safety of the management of such material, be disposed of in the State in which it was generated, whilst recognizing that, in certain circumstances, safe and efficient management of spent fuel and radioactive waste might be fostered through agreements among Contracting Parties to use facilities in one of them for the benefit of the other Parties, ……

Modes of Action in the IAEA

- Consensus Building
- Capacity Building
- Problem Solving
- Information Exchange

Consensus Building

- Joint Convention
- RADWASS Standards
- Collective Opinion

Capacity Building

- Co-ordinated Research Projects
- TC Co-operation
- Peer Reviews
- Seminars, Training Courses
- Fellowships
- Scientific Visits

Problem Solving

- Multinational Approach
- Joint convention
- Potential solution for smaller countries

Information Exchange

- Areas of interest: spent fuel storage, waste repositories
- Broader consensus needed

2. International/Multinational Approach

There is a different approach in the different Member States.
There are three groups:

- only a few Member States have officially high interest in the advantages of a international/ multinational solution as for example Switzerland
- there is a big group of Member States seeing multinational co-operation in this field only as an option
- a third group of Member States is strictly against the discussion of international or multinational solutions and co-operation at this point of time like Finland, France and Sweden. They think, it is not the right time for this discussion as they have their own programme already in an advanced stage. They see this discussion as a thread for their programme.

Having this in mind, it is very difficult for the Agency to take a clear position, as we have to represent all our Member States.

3. Potential solution for countries with small nuclear programmes

The question can be raised as to whether developing a strictly “national” approach is reasonable in the case of countries with a small nuclear power programme or only research reactors producing small amount of spent fuel and waste. This is even more the case for countries with radiation sources only and no nuclear facilities. This “national” approach may lead in those countries to inappropriate use of already scarce resources which, otherwise, could be used for different, equally important, social or economic purposes. In this respect, the concepts of “multinational” or “regional” spent fuel storage facilities and waste repositories would appear to make good sense. Several Member States of the International Atomic Energy Agency (IAEA) and part of the waste management community have already expressed their interest in such options.

However, such concepts involve political and public acceptance issues and therefore a consensus among countries or within regions eventually concerned by the development of a multinational storage or a multinational repository is a prerequisite for their realisation.

A potential solution could be, one country with a repository for spent fuel and high level waste could take the lead and accept the waste and radiation sources from other countries , even from a whole continent.

In this context it was deemed appropriate the IAEA identifies and assesses the important factors to be taken into account in the process of such consensus building. The IAEA already published a report reviewing and assessing these factors and providing Member States with a prospect for obtaining a more favourable environment for the development of a “multinational repository”. In the meantime the IAEA has started to evaluate the concept of a “regional spent fuel facility” in taking into account all issues that would influence its development including public and political issues.

4. Factors for Consideration

Ethical aspects

- Obligation to future generation
- Third parties' interests respected
- Equity

Legal and institutional aspects

- Harnomization of regulations
- Mature/stable regulatory frameworks
- International instruments

Safety aspects

- In general, no difference
- Adherence to international radiation protection and safety requirements
- Adherence to international instruments

Environmental issues

- Reduction of number of facilities
- Reduction of pressure on environment
- Higher level of assurance meeting the requirements
- Broader choice of sites

Technical issues

- Inventories, a prerequisite
- Agreements on acceptance criteria and QA/AC
- Agreements on locations and implementation steps
- In some areas well established technologies

Economic issues

- Reduce expenditures of partners
- Increase resource of host country
- Special concerns

Particular concerns

- Ownership
- Cost sharing
- Long lasting financial arrangements
- Long term institutional and political stability

Safeguards issues

- International conventions / treaties apply
- Well defined national/international regulations in country of origin
- Specific requirements at an early stage
- Maintaining long term controls
- Less facilities to safeguard

Public acceptance

- A prerequisite
- All information open and clear
- Real advantages in international solutions
- Basic issues do not differ from national projects
- Benefits seen in economics, environmental pressure, safeguarding
- International instruments/regulations apply
- Several issues remain to be fully assessed (liabilities, cost sharing, …..)

5. Conclusions and Outlook

It appeared from the preceding discussions that concepts for developing multinational facilities for spent fuel storage or waste disposal can present interesting advantages to countries with small amount of produced spent fuel or waste. There are many benefits in a regional solution like the obvious economies of scale achievable with multinational facilities. It is also clear that storing spent fuel in a few safe, reliable and secure facilities will facilitate safeguards and physical security and reduce the risk of proliferation, especially for highly enriched uranium fuel from research and test reactors.

Once a country or a group of countries is sufficiently interested in the concept of a multinational storage or disposal they must begin the task of investigating how to implement the concept. A prerequisite for such an implementation is a consensus among the relevant countries and regions, in particular regarding the transboundary movement of spent fuel and/or radioactive waste.

One of the most challenging tasks associated with establishing a multinational project is negotiating agreements which provide assurance that all political and financial obligations will be fulfilled.

However, one should be aware of the many political and public acceptance issues that may arise in opposition to a regional solution. Successful implementation of long term storage and disposal programmes on the national level, increased transparency in spent fuel and waste management programmes and non proliferation issues, and finally demonstrated broad adherence to international instruments such as the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management could significantly contribute to the acceptance of the international concepts of regional spent fuel facilities and radioactive waste repositories.

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